

SUPPORT FOR THE AMENDMENTS

The present amendment amends claim 1, and adds new claims 22-24. Support for the amendment to claim 1, and newly added claims 22-24, is found at specification page 3, lines 30-31, page 7, lines 20-34, as well as original claim 5. It is believed that this amendment has not resulted in the introduction of new matter.

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### REMARKS

Claims 1-4, 6, 7, 9-18 and 22-24 are currently pending in the present application. Claim 1 has been amended, and new claims 22-24 have been added, by the present amendment.

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The rejections under 35 U.S.C. § 103(a) of: (1) claims 1-7 and 9-20 as being obvious over Momma (U.S. Patent 5,798,173) in view of Dyllick-Brenzinger (U.S. 6,132,558) and Smigo (U.S. Patent 5,281,307); and (2) claims 1 and 21 as being obvious over Blum (U.S. 2004/0154764, which is the English language equivalent of WO 03/016624) alone or in combination with Dyllick-Brenzinger and Smigo, are obviated by amendment with respect to claims 1-4, 6, 7, 9-18 and 22-24.

Amended claim 1 now recites a process for improving the printability of paper and paper products by enhancing the water resistance of ink-jet printed images, wherein said process comprises treating the paper or the paper products with an aqueous solution comprising a cationic polymer, wherein the cationic polymer is *a hydrolyzed homopolymer of N-vinylformamide having a degree of hydrolysis of 50-100 %* and comprises positive charge providing units consisting essentially of vinylamine units, has a *charge density of at least 3 meq/g* and is used as the sole treatment composition in the aqueous solution, wherein said composition is applied in an amount of from 0.05 g/m<sup>2</sup> to 5 g/m<sup>2</sup> to the surface of the paper or the surface of the paper product.

Momma, Dyllick-Brenzinger and Smigo fail to disclose or suggest a hydrolyzed homopolymer of N-vinylformamide having a degree of hydrolysis of 50-100 %, as presently claimed.

Blum describes a paper coated with a coating slip comprising at least one optical brightener, wherein the coated paper is produced by a process comprising treating a base paper with at least one activator (e.g., N-vinylformamide), which enhances the efficiency of the optical brightener, before application of the coating slip containing the optical brightener (See e.g., abstract, [0001], [0011], [0013], [0020], [0033]). Blum describes that the *degree of hydrolysis* of the N-vinylformamide activator is *0-30 %, preferably 0-20 %, and more preferably 0-10 %* (See e.g., [0069], [0091]). Blum *only exemplifies* an N-vinylformamide activator having a *degree of hydrolysis* of *4.3 %, 5.0 % and 5.4 %* (See e.g., [0117], [0119], [0121], Table 7).

A reference must be considered in its entirety, including disclosures that teach away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 220 USPQ 303 (Fed. Cir. 1983).

Blum is silent as to a hydrolyzed homopolymer of N-vinylformamide having a charge density of at least 3 meq/g, as presently claimed. Moreover, Blum *explicitly states* that the degree of hydrolysis of the N-vinylformamide activator is 0-30 %, *preferably 0-20 %, and more preferably 0-10 %*. Accordingly, Blum *explicitly teaches away* from a hydrolyzed homopolymer of N-vinylformamide having a degree of hydrolysis of 50-100 %, as presently claimed. Therefore, a skilled artisan would neither have been motivated, nor had a reasonable expectation of success, to increase the degree of hydrolysis of the N-vinylformamide described in Blum to arrive at the hydrolyzed homopolymer of N-vinylformamide of the present invention having a degree of hydrolysis of 50-100 %, as presently claimed, *absent impermissible hindsight reconstruction*, thereby precluding a *prima facie* case of obviousness.

Assuming *arguendo* that sufficient motivation and guidance is considered to have been provided by Momma, Dyllick-Brenzinger, Smigo and/or Blum to direct a skilled artisan to arrive at the hydrolyzed homopolymer of N-vinylformamide of the present invention having a charge density of at least 3 meq/g and a degree of hydrolysis of 50-100 %, as presently claimed, which is clearly not the case, such a case of obviousness is rebutted by a showing of superior properties.

As shown in Table 1 of the present specification, Applicants have discovered that the paper of Examples VI-IX, which have been treated with a hydrolyzed homopolymer of N-vinylformamide having a charge density of at least 3 meq/g and a degree of hydrolysis of 50-100 % in accordance with the claimed invention, exhibit superior properties with respect to remarkably improved water resistance and water fastness of the ink-jet printed images, as compared to the inferior properties exhibited by the paper of Comparative Example IV, which has been treated with a hydrolyzed homopolymer of N-vinylformamide having a charge density of only 1.5 meq/g and a degree of hydrolysis of only 10 %, which closely corresponds to the broadly defined and/or preferred degree of hydrolysis range described and exemplified in Blum.

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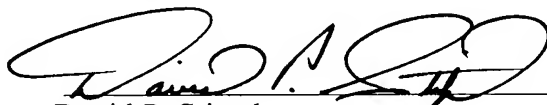
Withdrawal of these grounds of rejection is respectfully requested.

In conclusion, Applicants submit that the present application is now in condition for allowance and notification to this effect is earnestly solicited.

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Respectfully submitted,

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A handwritten signature in black ink, appearing to read "David P. Stitzel", written over a horizontal line.

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